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A  
V I E W  
OF THE  
O R I G I N, N A T U R E, and U S E  
O F  
J E T T O N S  
O R  
C O U N T E R S.

ESPECIALLY  
Those commonly known by the Name of **BLACK MONEY**  
and **ABBEY PIECES**;

W I T H  
A Sketch of the Manner of Reckoning with them, and its  
Affinity with that of the Roman ABACUS, the Chinese SOAN  
PAN, and the Russian SHTCHOTA.

With COPPER-PLATES.

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By THOMAS SNELLING. K

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L O N D O N:

Printed for T. SNELLING, (No. 163.) next the *Horn Tavern*, in *Fleet-Street*.  
MDCCLXIX.

Who buys and sells all Sorts of Coins and Medals.



# VIEW OF THE ORIGIN, NATURE, and USE OF THE ESTABLISHED OR COUNTERFEITS

Those commonly known by the Name of BLACK MONEY  
and ABUSE PICTURES;

A Sketch of the Manner in which they are  
affixed with that of the Royal  
Paw, and the Russian Imperial  
Crown.



With Copper Plates.

By THOMAS SNELLING.

LONDON:

Printed for T. Agnew & Sons, (Printers) near the West Gate, in Fleet Street.  
MDCCCXX.

Who buys, or sells, all Counterfeit Coins and Medals.





## P R E F A C E.

**I**N considering the origin and use of Jettons, we were led naturally to take notice of those struck by the authority of the prince, or of the states in France and the Low Countries; the early ones of that sort generally having on them the purpose they were struck for, and the Office they were to be used in; we have also related a few particulars in regard to their distribution, and the expences attending them; observing that the custom is laid down in some places, and still continued in others; likewise, the great difference betwixt the purposes of those at present made in France, from those formerly used there, but have not concerned ourselves with their types and historical inscriptions, those which regard the Low Countries having been done in Van Loons *Histoire Metallique des Pais Bas*, and Mieres's *Nederlandse Vorsten*, and it would give us great pleasure to see those of France described in the same manner. We have the rather chose to touch on these things from the novelty of the subject, and the little knowledge we have of these matters here in England.

We cannot learn it ever was the practise with us to make any Jettons or Counters for the purpose of calculation; the few we have of Queen Anne, George I. and some others since, being intended for play, and always found in silver: However, it is certain we used them here for computation, as well as abroad, Madox † mentioning them in the 17 John and 12 Ed. 2. both times tells us they were Venetian money; the first time he says they were shillings, and that 10 of them were equal to 15 shillings sterling; but I should judge they were rather Grossi or Matapani; which had about the year 1194 been first coined under Henry Danduli ‡, and weighed about 35 gr. troy, or 1½ of our sterlings or pennies, 10 of them making 15 sterlings, and not so many shillings.

The

† History of the Exchequer, p. 711. Cap. cxxiii. § xxix. ‡ Rubbi delle Moneta, 4to. a l'Aja 1754. p. 406.





## P R E F A C E.

The pieces exhibited in the following plates, differ widely from those just mentioned, having nothing in their types nor their workmanship to recommend them to the curious, neither is there any erudition contained in their inscriptions; or information to be gathered from them; this being the case, it will be naturally asked; for what purpose they are published? and in what consists the utility of this work? to which we shall answer, It is published with an intent that Gentlemen when they meet with them among other brass pieces in parcels, (as is almost always the case) may know what they are, and to what class they belong, and either turn them out, or keep them, as agrees best with their mode of collecting.

The pieces in the first plate are usually called Black Money, but if it be considered, that on the generality of them, there is not so much as a single letter to denote what prince or state they belong to; this alone will be sufficient to overthrow that opinion, to which we have added some others, where they are described; those in the second and third plates, and many of those in the fourth, are named Abbey Pieces, and have this appellation, probably from their being so frequently met with in their ruins; or, it is likely, the pious sentences found on them, may be also a motive for their being thus called; be that as it will, it is certain that in those religious foundations, their use were better understood, than any where else, or by any other persons, before the manner of working the present Arabick figures with the pen, was so well known as now; besides, the settling the revenues of their respective houses, required more of them, than most at that time; and this we imagine was then the only use of them; nor do we conceive they were ever in the nature of Tesser's or Ticket's, as some have thought; and as there are others again, that have supposed them ancient brass money of our Saxon ancestors, or belonging to some Gothic princes, and such like opinions; to correct these mistakes, and shew what they really are, is our purpose in the following sheets.

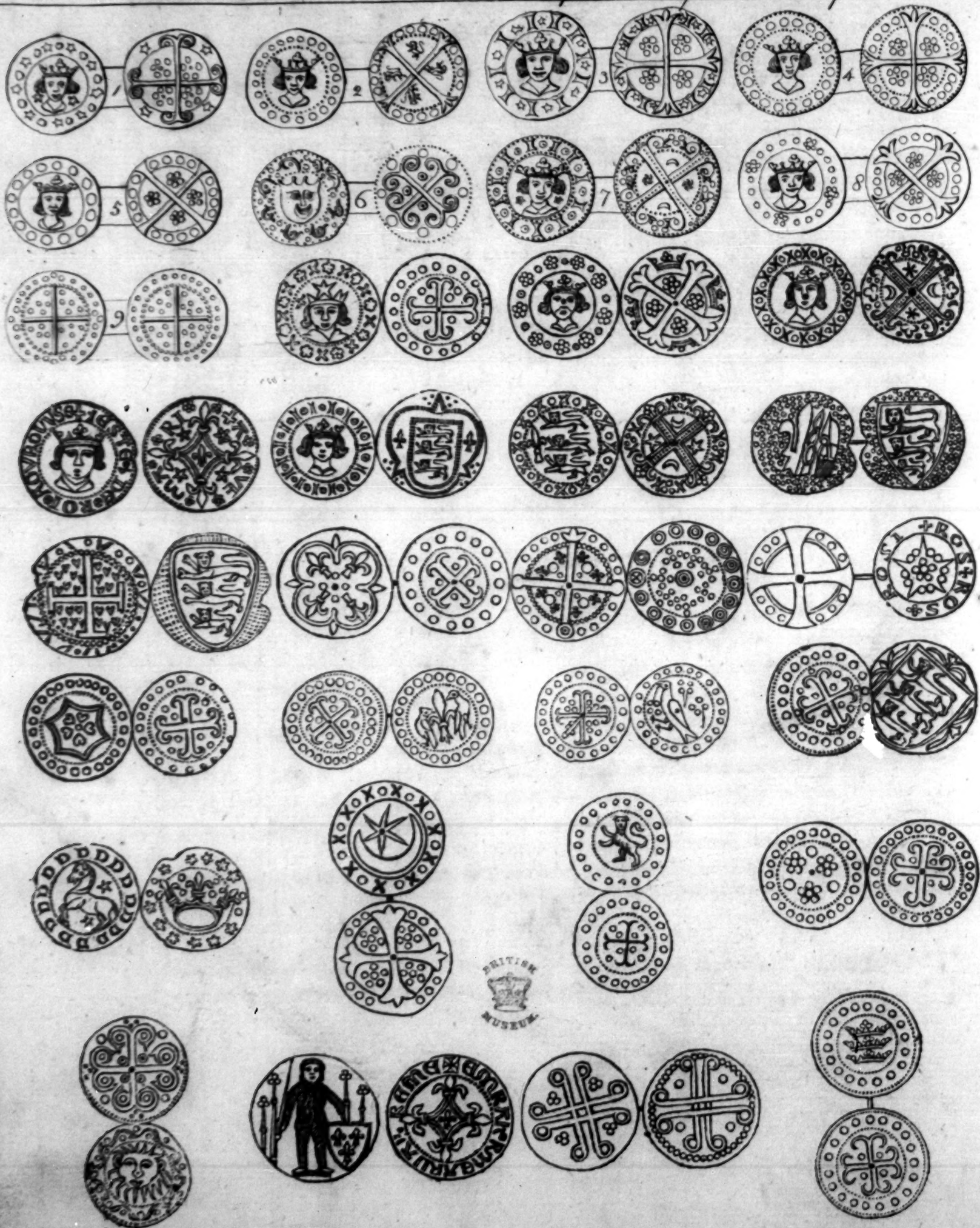
We have given a slight sketch of the manner of using them in calculation; and as the principles in working them, and the Roman Abacus, the Chinese Soan Pan, and the Russian Shtchota, are the same; we have performed the same sums all four ways. There are several ways of disposing of counters in adding and subtracting of mixed numbers; as pounds, shillings, pence, &c. besides what we have chosen, which differs from that used in the Exchequer, in settling the Sheriffs, and some other accompts, which we have been informed is done there once a year with such sort of pieces.







*Old Jettons or Counters commonly called Black money*







A  
VIEW  
OF THE  
ORIGIN, NATURE, and USE  
OF  
JETTONS  
OR  
COUNTERS.



Celebrated author(a) is of opinion, that the use of pieces to compute with, was too natural and simple not to be ancient, and probably were prior to Arithmetick itself; small stones, shells, kernels, &c. served those nations for common use, who either knew not, or despised gold and silver, and is still followed by many nations of savages: he carries the invention as far back as the sons of Noah, who to ease their memory, and settle among themselves the increase of their

(a) Mahudel de l'Origine & de l'Usage des Jettons. Hist. de l'Academie Royale des Inscript. tom. 3. p. 388; also Patin's Hist. des Medailles, cap. 14. Van Loons Hedendaagse Penninkunde, 8vo. cap. 4. folio, cap. 11.

Computing  
with Pieces  
ancient.  
as small  
stones, &c.



flocks, made use of this sort of calculation, the Egyptians used no other method, which Josephus informs us they learnt from Abraham, and Herodotus had before said that the Egyptians, as well as the Greeks, made use of this sort of computing, besides that with characters, with this difference, that they placed them from the left to the right, but the Egyptians from the right to the left.

Called by  
the Greeks  
Υὑποι,  
By the  
Romans  
Calculi.

Passages in  
Classic Au-  
thors allu-  
ding to  
them.

The Greeks called the little flat, rounded and polished stones, they used for these purposes Υὑποι, and the art itself Υὑποποποιᾶ, and from hence we have our terms of, *Cyphering*, to *Cypher*, &c. these same sort of stones were by the Romans called *Calculi*; hence our expressions, of *Calculating*, to *Calculate*, &c. and its probable were a long time used by them, as the words *Lapillus* and *Calculus* are sometimes used in the same sense; when luxury increased amongst them, they used ivory counters, as appears from Juvenal, Sat. II. V. 131. and although no cabinet can at present shew one of these pieces, yet an hundred proverbial expressions prove that this manner of reckoning was very common, as *ponere calculos*, a train of reasons, *hic calculus accedat*, the addition of a new proof added to several others, *calculus detrabere*, when they endeavoured to suppress an article, and a thousand others which alluded to addition or subtraction of Jettons in accompts. It was the first Arithmetick that children of every condition learnt; Capitolin, speaking of Pertinax in his youth, says, *puer litteris elementariis & calculo imbutus*; those which taught children this art, are by Tertullian, Ulp. l. 7. de oper. named *primi numerorum arenarii*, the lawyers called them *Calculones*, if slaves or lately made free; but if they were of a more elevated condition, then they were called *Calculatores*, or *Numerarii*; it was usual to have one of these masters in every considerable family, and the title of the employ was, *a calculis, a rationibus*.

Those in  
metal used  
by the  
Moderns,  
called  
Jettons.

Legpenny.

Rechen  
Pfenning.

Counter.

The pieces of metal used by the moderns for the same purpose, are called by the French, at present, *JETTONS*, and receive this name from the manner of \*their being used, that is cast or moved upwards, downwards or sideways; being derived from the verb *Jetter*, to cast or throw, and from this original came our expressions of, *Casting Accompts*, to *cast up a sum*, and such like. The words *LEGPENNING*, *LEGGELT*, the names given by the Dutch to these pieces, have also these appellations for the same reason, that is, from being *Laid*, or put in different manners on the Board, as shall be related. Whereas the word used by the Germans, viz. *RECHEN PFENNING*, or *Reckoning Penny*, has relation only to its use in general, and not to the manner of using it; and it is the same with the word used with us, viz. *COUNTER*, its original use being to Count, Accompt, Compute, Calculate or Reckon. In the same sense the French, Italians and Spaniards use their verb *Conter*, *Contaire* and *Contar*, from whence the latter have their *Contadore*, or *Counter*, as with us.

\* But on the old ones we find great variety in the spelling as *Geets*, *Geetz*, *Getoers*, *Getoin*, *Getoir*, *Getteum*, *Jettoer*, *Jestoir*, *Jetoir*, *Giets*, *Gietons*, and *Gitones*.

The



The inscriptions on the oldest of the pieces are relative to the purpose of striking them, as *pour les Comtes, pour les Finances*, and such like. LEGENDS regard the purpose struck for.

Many of them had Legends also that admonished those concerned in accounts to be careful in their computations, the advantage and benefit accruing from exactness in calculation, and advising those who have made an error, to examine and cast it up again, and such like expressions, as follows:

Gestez, Entendez au Compte.  
Entendez bien & loyaument aux Comtes.  
Gardez vous de Mescomptes.  
Bon Compte Ne Font a Nulle Honte.  
Qui Bien Jettra le Compte Trouvera.  
Jettez bien, que vous ne perdre Rien.

Qui Tien Bon conte pais luis resta. Exhort to  
Comptes & Jettes justement, craig- exactness in  
nant le divine Jugement. accompts.  
Se vous Failles, le Recomptes:  
Redde Rationem Villicationis Tua.  
Subducendis Rationibus.  
Bene Subductis Rationibus.  
Numeris Est Discretio Rerum Omnia.  
Contes, Pefes, mesures justement, car  
Conte rendres au jugement.

We find also on some, what Prince or great Officers they were made for, of which those which follow are a specimen. Declare for whose use they were made.

Calculi ad Numerandum Reg. Jussu Lud. XII. Jettoirs pour le Seigneur de Bersele.  
Gectoirs du Prince de Castelle. Jett pour Monsieur le Chancelier.  
Jettoirs pour Monseigneur de Berg.

We have a much greater variety on which are found the names of the several Bureaus, Chambers, Offices, and Departments about the court, in which the publick business was administered, and to assist the officers of which in their calculations was the intent they were struck for. And for what departments.

Jett pour ceulx des Finances.  
Gectoirs au Gens des Finances.  
Jett pour des Maitre des Fina.  
Gects du Bureau de Madame.  
Gitones del Bureo de su Magestad.  
Contadores del Bureau de su Alteza.  
Gects des Comtes de Lorrain.  
Gectoirs pour le Chambre des Comptes a Lille.  
Jettoirs de la Cambre des Comptes du Duc.  
Jettoirs de Messieurs de Conte a Lille.  
Gectoirs pour le Chambre en Gueldre.

Gectoirs du Bureau de Finances du Roy.  
Calculus Rationum Financiarum.  
Nummi Rationum Financiarum  
Jettoirs du Bureau des Maistres Dostel des Mesdames.  
Calculi Camera Computorium Ducatus Gelria.  
Calculi Camera Rationum Zelandia.  
Nummus Calculus Camera Rationibus Brabantia.  
Numisma Camer. Comp. Hollan.  
Gect de la Chambre des Aides.

Jett



Jett pour le Monnoie de Flandre.      Leggelt van de Munters van Hol-  
Ject. pour le Maist. de la Mon. a land.  
Brux.

Calculus Clere Hannonie.      Calculi Civitatis Bruxellensis.  
Gectiors des Estats de Namur.      Leggelt der Stadt van Brussel.  
Calculi Ordinum Belgia.      Calculi Aerari Bruxellensis.  
Jectoirs pour le Chambre Eschevi-      Calculi Fossæ Bruxellensis.  
nale.      Leggelt de Vaert van Brussel(b).

Some have not the words Gec-  
toir, Calculi, &c.      There were others without the words Gectoir, Calculus, &c. but the sense in other respects nearly the same.

|                                          |                                   |
|------------------------------------------|-----------------------------------|
| Pro Camerum Computorum Bressiæ.          | Les Cinq Gros Fermes de France.   |
| Pro Gentibus Computorum.                 | Fermes des Aides.                 |
| Camera Computorum Regiorum.              | Domaines du Roy.                  |
| Curia Monetarum Franciæ.                 | Alienation des Domaines.          |
| Suprema Repetundarum Curia.              | Chambere aux Deniers du Roy.      |
| Ad Usus Cancellaria Clivenfis.           | Conseillers du Roy & Notaires.    |
| Ad Usus Camera Rationum Insu-<br>lenfis. | Advocats aux Conseils.            |
| Pour l'Ecurie de la Roynne.              | Experts & Greffiers des Batimens. |
|                                          | Cavallerie Legere.                |

Others have the names of the Officers on them      Finally, many of them have the names of the officers on them, for whose use they were intended, as follows:

Raoul de Refuge, Maistre des Comptes of Charles VII.  
Jean de St. Amadour, Maitre d'Hotel of Louis XII.  
Thomas Boyer, General de Finances under Charles VIII.  
Jean Testu, Conseiller & Argentier to Francis I.  
Antoine de Corbie, Contrôleur under Henry II.  
Jehan Stanley, Tresorier de Normandy under Lewis XII.

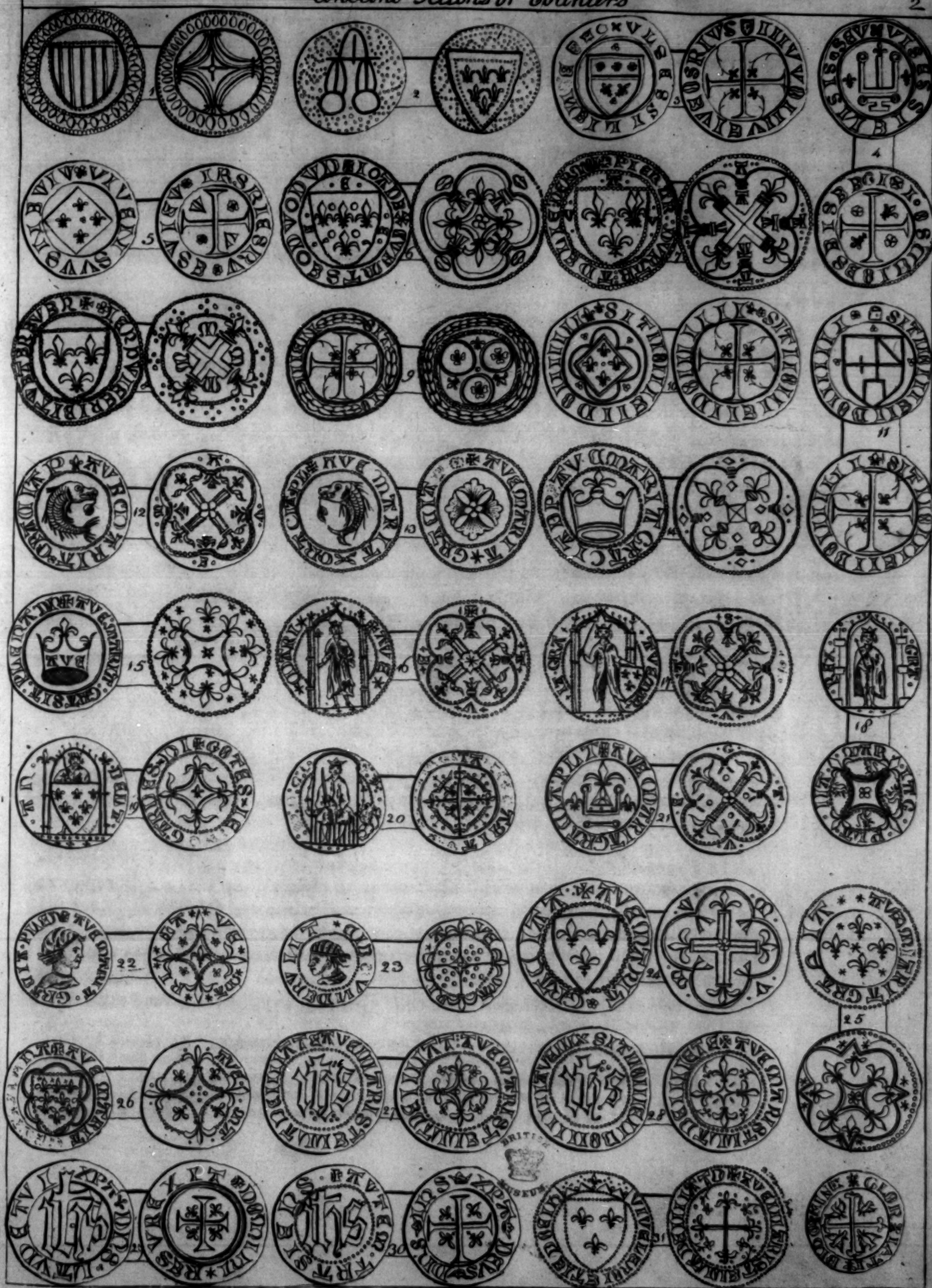
Many the office without the name.      The title of the office, but without the name of any officer, is also found on some, as Tresor. Gnal. des Fermes de France. Tresorier Gnal. des Guerres, and no doubt a great number of other varieties, which never came under our notice.

TYPE.      The pieces of metal first used by the moderns for the purposes of computa-  
First plain,      tion, were round, flat, well polished, and quite plain; they afterwards began to  
then with      engrave on them Flowers, Leaves, and other ornaments, to which succeeded  
Flowers,      that of the Head, Device, and Arms of the Prince, who caused them to be  
lastly heads,      struck; this sort, we are told, had their origin in France in the 14th century\*;  
and Devices.      but

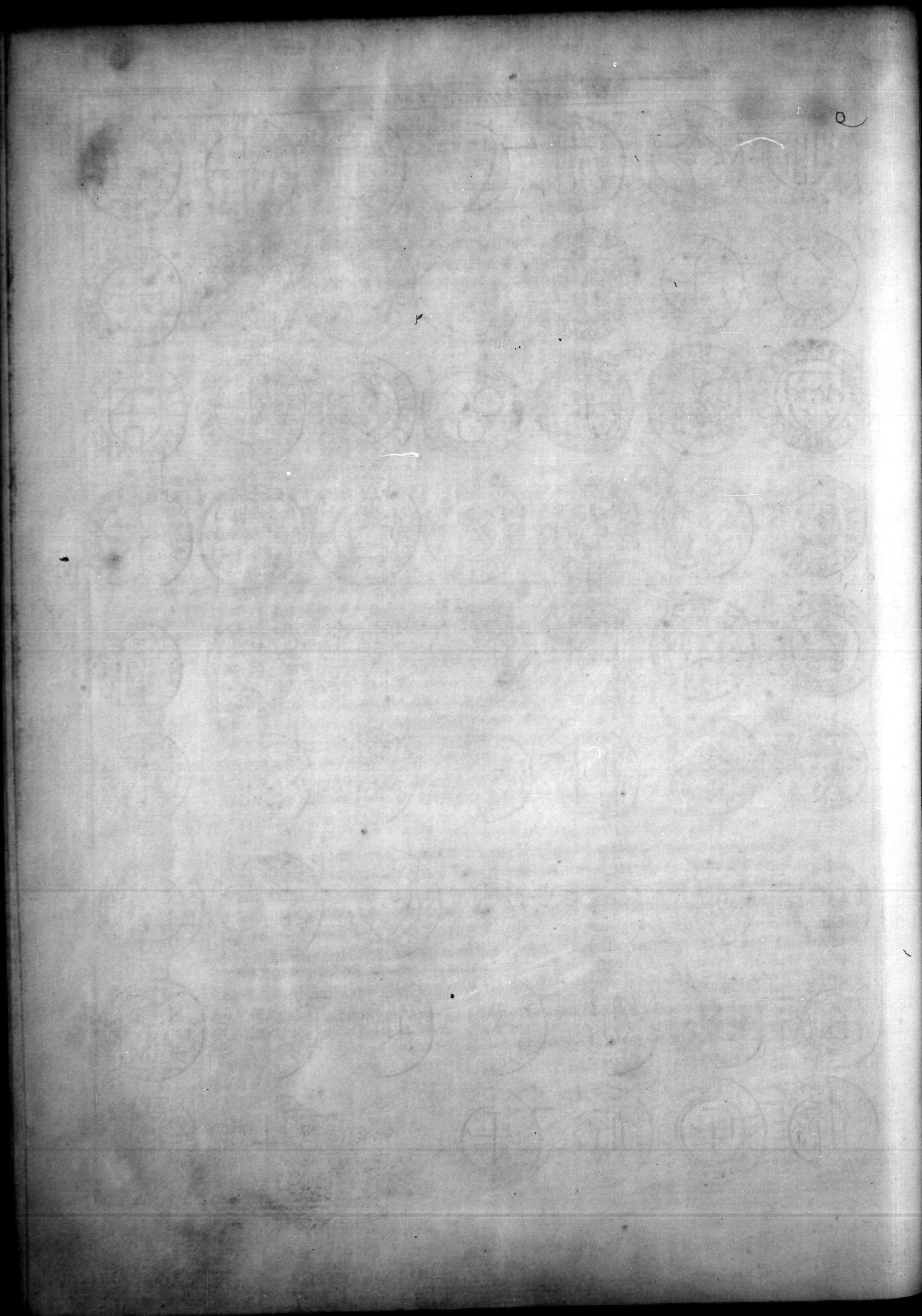
(b) Vidé Histoire der Nederlandsche Vorsten, fol. Sgraavenhage 1722, 3 deel. Van Loons Histoire Metallique des Pays Bas, 5 tom. fol. Amf. 1738;

\* A fine Jetton of our Edward the Third, struck as we apprehend in France; will be found the most ancient of these pieces, which has yet come to light, and may be regarded as an Historical one, the King being exhibited thereon with his sword and shield, as asserting his right to the crown of that kingdom, the field is also semy of Fleurs de lis, and the inscription *Edwardus Rex Regnat;* on the reverse is four crowned Lyons in crois, with four fleurs de lis in the vacancies, all within an ancient











but, however, the oldest Jetton of this sort, in the King of France's cabinet, is one of Charles VII. who lived about the middle of the next, or 15th century; the most ancient among those of the Low Countries, are those of Philip the Good, Duke of Burgundy, about the same time. After which, towards the close of the same century, or under Philip the Fair, but principally under his son, Charles V. they began to mark the principal events of the state on them, from which time Jettons began to be monuments consecrated by sovereign authority; for the choice of the Emblems and Inscriptions, did not depend upon the Graver, but every year they presented to the States General, to those of particular provinces, and to the Council of State divers designs, of which that was chosen, which they thought was most agreeable to the conjuncture of the times(c). Under such regulations were struck in the Low Countries the most interesting collection of Jettons that have ever appeared, commencing with their defection from the Spaniards, about anno 1563, and continuing until the truce in 1609, by which the Dutch became a free State, after which they are fewer in number, and not so ingenious.

This custom of making them historical, obtained also in France, upon great numbers of which, are found many ingenious and interesting Devices, Emblems and Inscriptions, especially since the establishment of the Academie Royale des Inscriptions, one of the principal functions of whose members related to these matters, and which they continue to perform till this day.

The practice of giving, or distributing Jettons, as Etrennes or New Year's Gifts, at the publick expence, in the Low Countries, began towards the close of the 15th century, when a certain number of Silver and Copper Jettons were given to each member of the state, as the Governor General, those of particular provinces, the members of the estates of each province, those of the Chamber of Accompts at Brussels, Flanders, Holland, and Gelderland; the Inspector of the Canal of Brussels, and other publick Officers, which were put into a magnificent purse, or a silver box, the top of which was ornamented with the Arms of the Province, the City, or the Assembly; there was also an officer established on purpose to distribute them in the order, and conformable to the Arrets of the Council, as the number of Jettons was proportioned to the dignity and quality of each officer, and varied according to the number of persons who assisted at the Assemblies.

The expence of these Jettons, in the United Provinces, amounted anno 1596, to near 700 l. sterl. but in the year 1619 to 2770 l. sterl. what occasioned so great a difference, was in part owing to the being given to a greater, or a lesser number of members, one year than another, but mostly in the numbers given to the same members, which sometimes, as in 1589, was 50 or 60 in silver; in 1694, it was as many as weighed 1½ mark (about 11 oz. 16 dwt. 6 gr. troy) in 1596 there was an hundred in silver, each worth about 11 pence, besides what they called a Jet, or a necessary number of Jettons for calculation, was in 1330 c-

ancient compartment, and inscribed *Garde Robe Regis*, having on both sides small open crowns between each word, and seems to have been struck for the use of the King's Wardrobe. It is engraved in our View of the Coins struck by English Princes in France, p. 5.

(c) Van Loon's Preface.

estimated



estimated at 48 guilders, or about 4l. 8s. sterling; but in 1672, and ever since, worth 81 guild. or 7l. 8s. 6d. sterling.

Laid aside in  
the United  
Provinces.

This custom of giving Jettons having ceased in the United Provinces many years, (but their use in calculation a long time before) a method has been introduced of giving, in lieu of them, their value in money, which appears to have been done anno 1654, and is still continued; thus every year towards the end of December, the same day they regulate the Etrennes, the Agent of the States General receives a formal order to take 2061 guil. 12 st. to make the usual reports on, according to the Ordonnance established for ever; the States of Holland give also every year to the Counsellor Deputé a certain sum on the same account, which, anno 1723, according to the ancient custom, amounted to 972 guild. about 89l. 2s. or 12 Jets, each of value of 81 guild. which were distributed to the Counsellor, Deputy Counsellor, Secretary, and two Counsellors of the Finances, the officers of the Mint at the Hague are allowed also annually a Mark weight of silver.

Still continued in the  
Austrian  
Low Countries.

In the Catholick Low Countries, the old custom of giving Jettons is still continued in its full extent, for under the reign of Charles II. every New Year's Day, the Counsel of Finances ordered the Receiver General, to present to the Governor General, then residing at Brussels, a magnificent embroidered purse, containing 100 silver Jettons, the Emblem and Device of which differed according to conjunctures; the same was practised under Philip V. when each member of the council royal, that was added to the privy counsel, received also yearly 100 silver Jettons, and since anno 1717, these Etrennes have been doubled, and the Governor General has received 200 annually, instead of 100; the same thing is also observed at Tournay, at Ghent, and the territory of Ostend, in the Chatellany of Courtray, in that of Ipres, in the City and Franc of Bruges, and at Namur; in which last province they distribute besides, a great number at the arrival of every new Governor General and Grand Bailey, in memory of his taking possession of that charge, having on one side his Arms, Device, and Titles, and on the other the arms of the province; thus in 1715 they amounted to 1303 silver, and 2616 copper, that is 168 silver, and 363 copper to the Governor General, and half as many to each member of the Assembly, of the Estates, this custom has produced, for a great many years, an uninterrupted series of governors of this province, their titles, and the year of their instalment.

Formerly  
done in  
France.

The Kings of France formerly, when the use of Jettons was well established caused purses to be made and distributed to the Officers of their Household, which were charged with the care of the publick expences, to those who were appointed to examine them, and to those who had the management of the publick money, but at present, and for a long while past, the original method of giving them to the publick offices has been laid aside, they being at this time presented to the King, to the Royal Family, to the Princes of the Blood, the Chancellor, the Ministers and Secretaries of State, in magnificent purses of 100 Jettons each, some gold, some silver, according to their quality or custom, which is done by the Prevot des Marchands, and Echevins of the City of Paris; also several other officers, as the Gardes des Tresors Royale, les Tresoriers de l'Extraordinaire

At present  
given to the  
King and  
Ministers of  
State.











traordinaire and Ordinaire des Guerres, those of the Marine and Partes Casuelles, & les Tresoriers des Batimens du Roy; nor is there scarcely in Paris a publick Body, either in the superior or inferior Magistracies, the Faculties or in the companies of Marchands, or those of any Arts or Trades, which have not their silver Jettons ornamented with their device, and struck for their particular uses, to be distributed at Receptions or Assemblies; the three Academies likewise, which have their sittings in the Louvre, as also that of Painting and Sculpture, which assemble in the same place, have their Jettons to distribute to the Academists which assist there, and this is at the King's expence, a fund being established for that purpose<sup>(d)</sup>.

Also by publick Bodies, Companies, &c. to their Members.

What has hitherto been said, principally regards those Jettons made by publick authority in the Low Countries and in France; we shall now proceed to what is our principal intention, that is those which have no such plea, but made by them whose employment it was, for the use of private persons, or rather for Communities, Abbies, Monasteries, Churches, &c. whose revenues required a good deal of computation.

Jettons by authority not the design of this work, only private ones.

We think the pieces in pl. 1. are some of the earliest counters made use on for this purpose, and prior to those we have already been treating of, and among them those with the head on one side, and the cross on the other, to be as ancient as any, but can determine nothing in regard to their age, or where struck; we can only say the English Sterlings, with this head, first appeared in 1272, and continued till 1500, different sorts of crosses make up the generality of the other types; as for legends, we are of opinion they were a long while before they were introduced, but its place filled with dots, pellets, mullets, roses, &c. as may be seen by turning to the pieces in the plate, better than by any description.

Those in pl. 1. the most ancient Those supposed the oldest with the head. Are without legends.

The pieces with the head, in the first plate, which we have been just mentioning, are by many esteemed, and usually called *Black Money*, but that they have no right to be admitted into this class, we think is clear for the following reasons; 1st, It does not appear from any of our records, we ever had any Base or Black Money till Henry the Eighth's time; 2dly, No other country in Europe at the time these are supposed to be struck, had such a head upon any of their coins, or indeed any head at all; besides, if we even grant they had, it would prove nothing, as these pieces have no pretence to be thus called, on account of the metal they are made of, which is *Brass*, and a bad sort also, with a larger mixture of lapis calaminaris than usual, and very thin withal.

Usually called Black Money. but falsely. are a bad sort of brass

Now we think there is hardly a single instance to be given, or a piece to be produced of any money thus circumstanced, they being all that have come to our knowledge, made of a mixture of copper and silver, but so little of that as not after being sometime in currency, to be distinguished by their colour, whether there is any silver or not in their composition, and on this account generally called *Black Money*, from their colour, and to this sort of money is to be referred the *Monnoye Noire* of the French, and *Moneta Nigra* of Latin authors.

Black money has always a little silver in it.

(d) Savary Dictionnaire de Commerce.

We



We will now proceed to describe the pieces in the second and third plates, not as they stand, but first their types, and afterwards their inscriptions.

TYPES on  
pl. 2, 3.

variety of  
Crosses.

differently  
ornamented.

rude Shields  
with fleurs  
de lis.

Tower.

Dolphin.

Crown.

Lamb.

King.

Lyon.

Head.

Almost all the pieces in plate 2, and 3. have on one of their sides a Cross, but widely differing from each other, according to the capacity and skill of the graver; thus some of them are plain, others are fleur de lissé, many of them are narrow, others again are broad; on some the bars of the cross consist but of one line, some of two, and others of three, and on many they are dotted, several are voided or open, forming a sort of futil, a sort of compartment of 4 Arches or Leaves surround many of them, the vacant spaces or interstices are embellished or ornamented with letters, leaves, fleurs de lis, stars, &c. most of which issue from the inner circle or points of the compartment.

On several of them we find fleurs de lis in shields of different forms, some having three, some four, others again have six and eight, but on No. 24. pl. 3. they are semée in the area of the piece without any shield, and we think the major part both of these and the crosses have been copied, though in a barbarous manner, from French coins.

The type of the Gros Tournois seems to be that meant on No. 24. pl. 3. but whether a Tower or Shakes we cannot say, it is very probable those with the Dolphin on No. 12, 13. pl. 2. and No. 24. pl. 3. were intended for Dauphiny, if not made there, as they much resemble the money struck in that province; there are many French Doubles and Deniers also, which have a crown on them, as No. 14, 15. pl. 2, those with the Holy Lamb, as No. 8, 9, 10, and 22. pl. 3. seem to be taken in part from the French Gold coins, called by them Moutons and Aignels, as those with the king standing in his royal robes crowned, with a sword or scepter, No. 16, 17, 18, 19, 20. appear to be rude imitations of another gold coin of theirs, called a Royall; there is a Lyon rampart on No. 13, 15. pl. 2. the former within a compartment, its probable these may have belonged to Flanders and Brabant; the head on No. 12. pl. 3. is the only one that looks in the English taste, but that much resembles that on our English Sterlings, as they were for above 200 years, we know of no money with a profile head, from which those of No. 22, 23. pl. 3. can be taken.

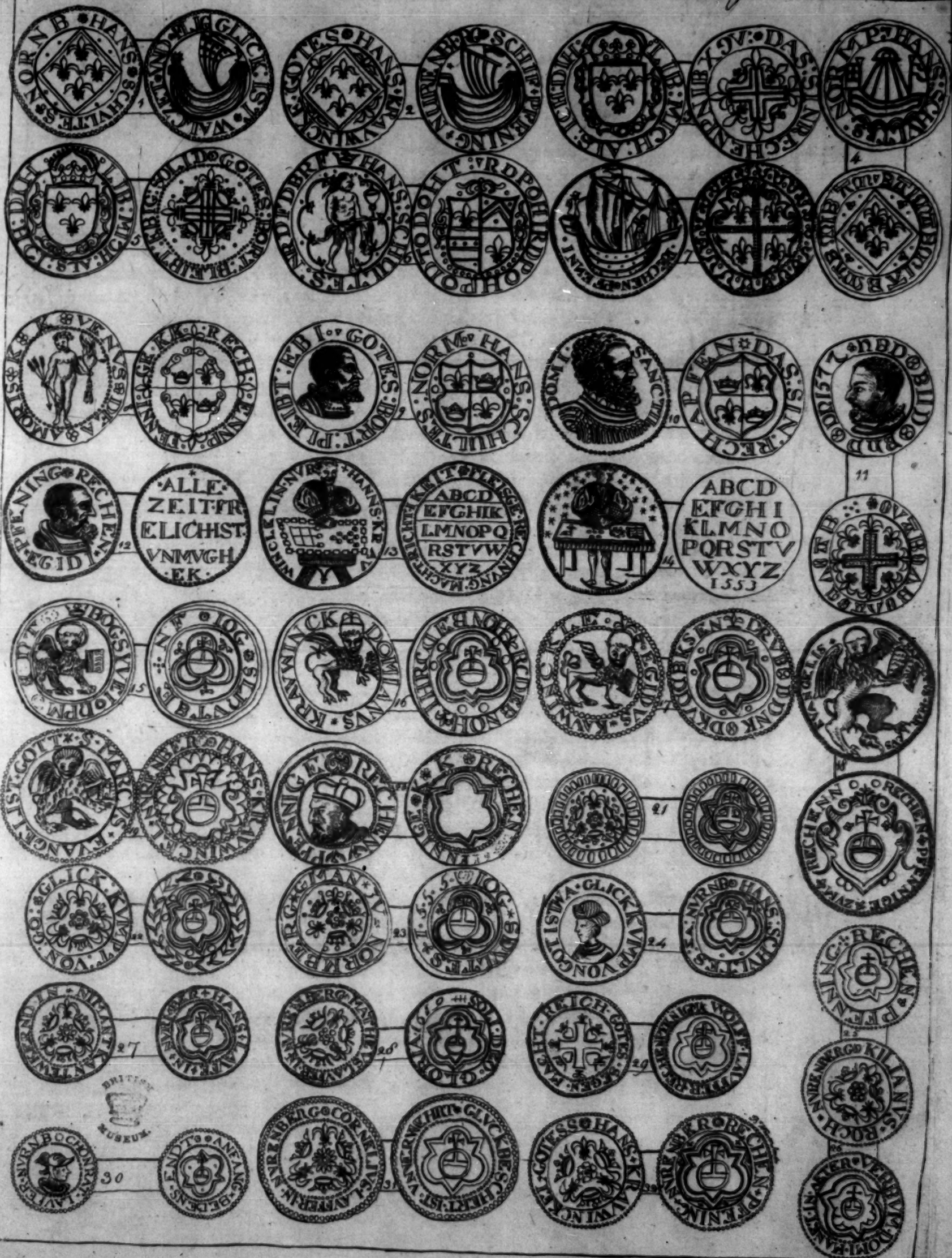
No. 2, 3, 11,  
pl. 2. very  
ancient.  
No. 19. pl. 3.

We apprehend that No. 1. pl. 2. is very ancient, the shield on which, as also on No. 3, and 11. carry no meaning with them; No. 2. we also think very ancient, and the scales on it very singular and proper for a Jetton, the type of No. 17. pl. 3. resembles a sash or scarf, as does No. 19. a crest, but both extremely rude, the three letters IHS for the word Jesus, on No. 27, 28, 29, 30. pl. 2. and No. 20. pl. 3. seem to be peculiar to these pieces, and owing to the piety of the age; what is meant by the three circles on No. 9. pl. 2. No. 9, and 14. pl. 3. we don't know.

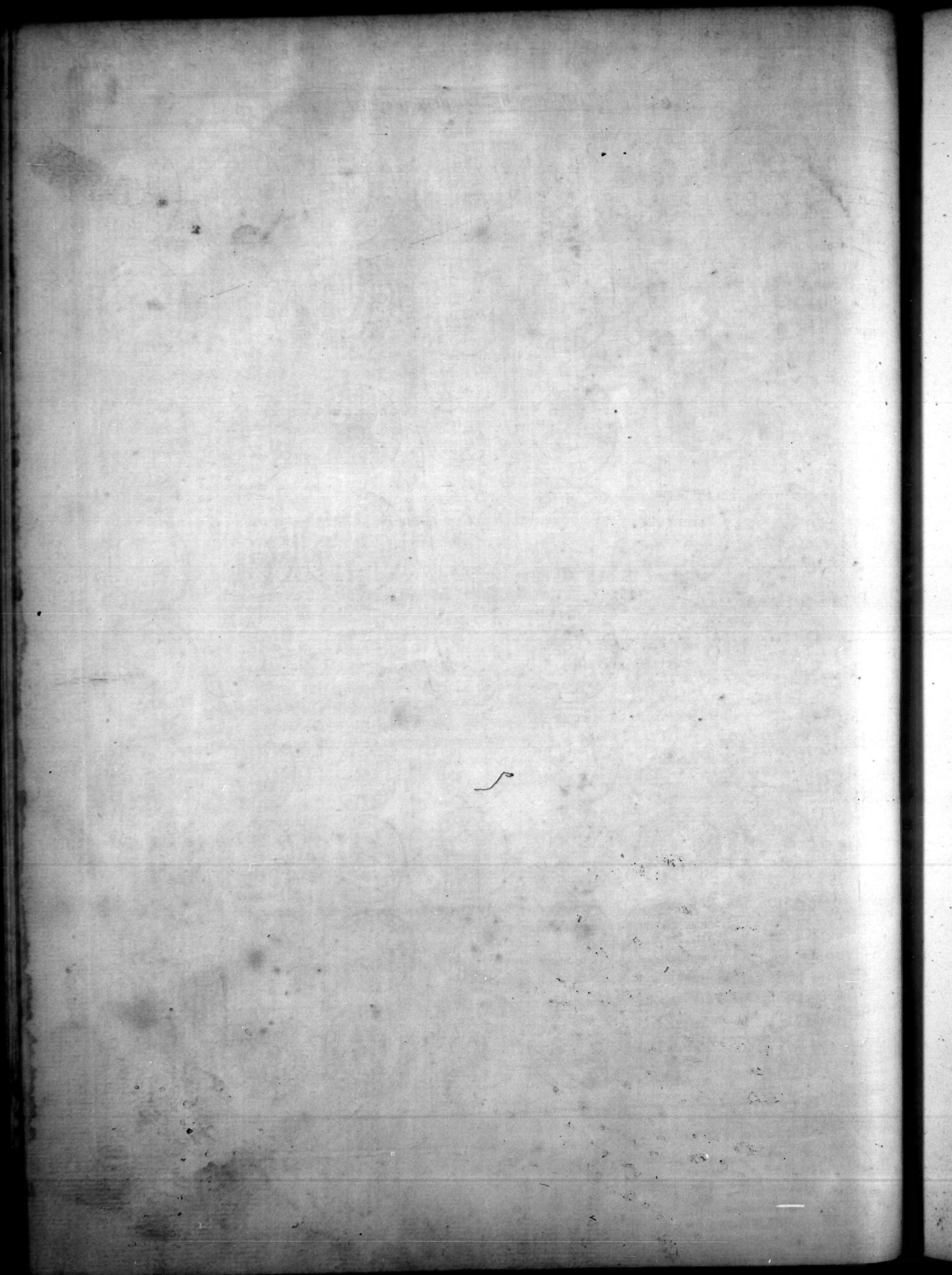
The



Reckoning Pennies or Counters made at Nuremberg









The most ancient of these pieces, we apprehend, had no legends on them, but the circle where they usually are, was filled with dots, roses, strait strokes, co-ronets, stars, &c. as all those in pl. 1. No. 1, 2. pl. 2. and No. 21, 22. pl. 4. and afterwards when they began to put letters, they seemed rather for ornament than information, as sometimes a single letter was repeated till it filled the circle, as No. 13. pl. 3. others have two or more, and those consonants and on many, altho' there are many different letters, yet appear to be without any meaning, and quite unintelligible, such as No. 2, 3, 4, 5, 6, 8. pl. 2, one side of No. 3. pl. 3. also of No. 4, 6, 11, 15, 16 and 17. pl. 4. all which are copied as near as possible, and with great exactness.

Those whose legends we are able to read, for the most part contain some religious or moral sentence, but in a most sad, careless, and blundered manner; thus on No. 9. pl. 2. is *Sit No-Men*, No. 10, 11, have *Sit Nomen Domini*, on both sides, but No. 28. on one side only: from No. 12, to 26 inclusive, also No. 1. pl. 3. although they differ so much in their types, have *Ave Maria Gracia Plena*, or part of it, some only on one side, others on both; No. 18. has *Rex Gra*, several also have *Ave M.* in the external Angles of the Cross; and on No. 22. pl. 3. stands *Ave Maria Mater*; on No. 27, 28, and 31. pl. 2. is *Ave Mariable Stella Dei Mater*, in whole or in part. No. 29. has *xpa Dns Laudet Vi*, on one side, and *Domini Resurexit*. on the other; round No. 30. is *xpa Deus Dns Ihs—Autem Tranciens*, and on No. 32. *Gloria Tibi Domine*; we have also one with *Pater Nos. Qui*, another with *Pater Noster*, *Ave Maria Credo*, round No. 9. stands *Agnus Dei Qu Tolis—Peccati Mundi Mife*; we are ignorant what is meant by *Pierar Durar Adelie Derme*, on No. 7. pl. 2.

On No. 1. pl. 3. we find *Vive Le Roi Ave M.* on others, as No. 2, 3. pl. 3. *Vive le bon, Vive le Bon Roy de France*; on No. 18. and 21. it is twice repeated, sometimes we also find *Vive le Roy Vive le Royne*, and *Vive le Noble Duc*; on both sides of No. 4. are *Vive Amant, Vive Amours*; and on No. 6. *Amor, Amor, Amor, Amours*, many more as unintelligible as this we find; thus on No. 5. *Je Suis de la Tount*, on No. 9. and 12. *De la Ton Sui Noume*, round the lamb on No. 9. is *Heurte Rien Moutoun*, and on No. 10. *Mouton Sul De Bri*, round No. 7. *Le Noble Etpieri*, and No. 11. *Cest Madalle Bestet*, on No. 16. *Loenge Adieu Avant Tout Eu*.

We learn from No. 14, to 24 inclusive, although their figures are so very different, yet that they are all intended for Jettons, we find by their inscriptions, as on No. 15. *Getoers de la Tor B.* the word *Getoers* is likewise on No. 12. round No. 16. and 18. are *Gettes Seurement Gettes*; on both sides of No. 19. *Gettes Rien Paie Rien*, but only on one side of No. 17. and 21. on No. 14. *Gettes Sil Vous Plais*; on No. 20. *Gettes Paies Rendes Rien*; on No. 22. *Gettes Sans Failir*; on No. 23. *Icy Comptes Et Geotes Bien—Car La Trouvera Le Compte*, and finally on No. 24. *Gettes Entendes au Compte—Gardes Vous de Mescomptes*, we have also one inscribed as follows, *Ces Sont Les Getoers De la C...—Aus Tresories Le Roi*.



Where  
made not  
known,  
but many  
probably at  
Nurem-  
bergh.

There are no lights left us, which we have been able to come at, from whence we can judge where, or by whom, the Jettons in the three first plates were made, but we think it is not improbable but many of them were the productions of Nurembergh, as well as those which follow, and we are inclined to think so from the likenesses of the first four in pl. 4. to No. 3. pl. 3. the reverse of No. 11. pl. 4. is also in the same taste; however, that be, we are at more certainty in relation to those which follow.

Where are  
mills on pur-  
pose, and it  
is a particu-  
lar business.

They have had for a long time at Nurembergh mills for the making of Jettons, called by them *Rechen Phennings*, which business is one of those called in Germany *Gesparred*, or *Locked up*, that is, those who are brought up to it, cannot after they served their apprenticeship, quit that city to follow it for a certain time in some other place, and return again there and settle. It is very probable that most parts of Europe wherein they were used, especially formerly, were supplied with them from hence, but whether those with the fleur de lis were intended for France, those with the lyon of St. Mark, No. 15, 16, 17, 18. for Venice, and those with what the Germans call the *Reichs Apple*, or *Monde* and Cross on one side, and on the other side 3 fleur de lis, and 3 crowns placed circularly round a rose, as No. 21, 22, 25, 26, 27, 28, 31, 32, were designed for Germany; or whether all the sorts were sent promiscuously, we cannot tell; but, however, at present they are frequently found together.

Types,  
whimsical  
and without  
design.

Heads of the  
makers.

The types upon these pieces seem to be directed by whim, humour, or accident, without any certain design or scheme that they followed; there are heads upon No. 9, 10, 11 and 12. but whom they are intended to represent does not appear; round the first is a German inscription, the English of which is, *The word of God endures for ever*; No. 10. has *Sancti Domi*, that round No. 11. we cannot read, under the head on the last is *Egidi*, I suppose for *Egidius Krawinkel*, whose head we imagine it is; as also that on No. 10. to be *Damianus Krawinkel*, as we have one like that so inscribed, it is therefore probable the other two heads are also those of the makers; that on No. 20. we think to be intended for the Emperor Charles V. and we have seen one with that of his son Philip H. crowned, with *Soli Deo Gloria* round it. On No. 13, and 14. there is a person with a table before him, having many counters on it, and on one side a sort of Abacus or counting board; the last has no inscription, and the first the maker's name, but there is one sort which has *Rechen Meister*, or Cyphering Master round it; we think the alphabet on the reverse of No. 14. might be intended also as a sort of a Horn Book for children, it is sometimes contained in a square; on No. 6. is a figure with a sort of cup in her right hand, said by some to be Pandora with her box.

A cyphering  
master with  
his counting  
board.

The alpha-  
bet.

A Venus appears on No. 8. with a flaming heart in her left, and three arrows in her right hand; a piece like No. 6. made as we suppose for the use of the Duchy of Burgundy, is found in great numbers, the legends of which are seldom to be read, any more than that is; the type is found on many in *Meris, Nederlandisch Vorsten*, vol. 1. the first as ancient as 1496, we suspect they are all made at Nurembergh, as we have one which has *Macht Zu Nurembergh* on it.

The











The winged Lyon of St. Mark is on one side of No. 14, 15, 16, 17, and 18. <sup>Lyon of</sup>  
a sort of Turk's Head on No. 24. and that of Mercury on No. 30. the reverses <sup>St. Mark.</sup>  
of all which, viz. from No. 15. to 32. are a Globe or monde surmounted with  
a Cross within a double compartment, and is taken from the ancient Rhenish <sup>Type of</sup>  
Gold Gulden, of which it continued to be the common type for many years. <sup>the Gold</sup>  
<sup>Gulden,</sup>

The Makers of these Pieces at Nurembergh, seem at first to have been confined to a very few families only, for we find but the name of four families from between the middle of the 16th to the middle of the 17th century, viz. that of *Schultz*, of which were *Jog* and *Hans*, one of *Koch*, viz. *Kilianus*; 3 of *Krawinckle*, viz. *Egidius*, *Damianus* and *Hans*, which last made more than all the others taken together; of the *Laufers* there were six, viz. *Hans*, *Matthew*, *Wolfgang*, *Chonradt*, *Cornelius* and *Laz Gotlieb*; there are some pieces with c. k. but whether for *Koch* or *Krawinckle* we don't know, but since the above mentioned time, there seems to have been a great many more, as we shall observe when we come to the last plates.

The legends on No. 1, 2, 4, 6, 9, 13, 15, 16, 17, 19, 23, 24, 25, 26. and from <sup>Legends</sup>  
27 to 32. are the maker's names, and place where made in Nurembergh; No. 8. <sup>often the</sup>  
has only k. k. and No. 12. *Egidi*; No. 7, 8, 9, 12, 18, 20, 25, 29, and 32. <sup>maker's</sup>  
declare they are *Rechen Phenige*, or Counter; No. 2. a Ship Counter, No. 18. <sup>name,</sup>  
Counters to Compute, and No. 13. which is also German; we think may properly enough be englished by *Right Reckoning makes long Friends*; most of the remaining legends consist of moral sentences in German, but those of No. 26, and 28. are in Latin, viz. *Soli Deo Gloria*, and *Verbum Domini Manet in Aeternum*, and there are others also, especially of *Hans Krauwinkle*.

Almost all the pieces in pl. 5. are of *Hans Krawinckle*, and made in Nurembergh, <sup>All in pl. 5.</sup>  
having either his name at length or h. k. on them, most of them probably of his <sup>are Hans</sup>  
own invention; among the types many of them are drawn from sacred history, <sup>Krawinckle.</sup>  
as Adam and Eve, with the reverse of our Saviour on the cross. On No. 30; David <sup>Types.</sup>  
and Jonathan, Joab and Amasia. On No. 4; Haman and Mordecai; and the hanging <sup>Bible Hist-</sup>  
of Haman on the reverse. Of No. 1; Judith. On No. 2; also others not engraved; <sup>ories.</sup>  
as Saul and Samuel, Samuel and David, the Beast in the Revelations, &c. on  
many others are represented the Heathen Gods, Goddesses, and Heroes, as <sup>Heathen</sup>  
*Jupiter* and *Ganymede*; No. 5. *Jupiter* and *Europa*, the reverse *Pallas*, *Juno*, and <sup>Gods, God-</sup>  
*Venus*; No. 11. *Pluto* with *Cerberus*; No. 15. *Neptune*, *Hercules* and *Pallas*; <sup>desses, and</sup>  
No. 8. *Mars* and *Venus*, No. 10. *Apollo* and *Diana*, *Meleager* and *Atalanta*; <sup>Heroes.</sup>  
No. 13. *Perseus*, No. 14. *Cephalus* and *Procris*, No. 16. *Pyramus* and *Thisbe*,  
No. 17. there is also one, but not engraved, inscribed, *Honos Et Virtus*, with  
the figures of those two deities. We find also many great captains of Greece, Car- <sup>Heroes of</sup>  
thage and Rome, as *Alexander the Great* on No. 19. *Hannibal* on No. 20. also <sup>Greece,</sup>  
another nearly like those; of *Scipio Africanus*, all with the same reverse; *Romu-* <sup>Rome, and</sup>  
*lus* and *Remus* is on some, *Curtius* leaping into the fiery lake, No. 21. with <sup>Carthage,</sup>  
*Popilius* the Roman legate, drawing a circle round *Antiochus IV.* king of Syria. <sup>Modern</sup>  
Also many of the modern Princes, as the Emperor *Charles V.* No. 22. the <sup>Princes.</sup>  
Grand Signior, No. 23. *Queen Elizabeth* on Horseback, as she appeared at the  
camp



camp at Tilbury 1588; besides which there is another of her in a standing posture, as also of the King of the Romans, of Bohemia and Spain, with their respective arms on the reverse.

Some copied  
from French  
Jettons

Others of  
his own  
chusing.

Besides the above mentioned Types of his own invention, there are others copied from Medals and Jettons done in France, as No. 27, 29. as also the reverses of No. 9, 12, 14, and 18. No. 16. is taken from one of Maximilian, Archduke of Austria, administrator of the Teutonic Order, the device of Charles IX. is found on No. 7. besides which there are others also which we have not engraved, as one of Charles IX. with three figures, *Amans Famasque*, another of Henry III. semé of fleurs de lis; 2 branches between 3 crowns, *Mamet Ultimo Cælo*; Henry IV. with a sword between two scepters, *Duo Protegit Uno*; others again perhaps his own chusing, as Minerva standing, *Seu Pacem Seu Bella Geras*, the same type, but with *Quos Vult Minerva Beat*; an armed man, *Nec Ignis, Nec Terra Cedens*, another, No. 17. *Aut Caesar, Aut Nihil*, a Horseman, *Per Saxa Per Ignis*, a figure burning implements of war, *Ex Pace Ubertas*; another, *Mater Pacis Concordia*; Apollo sitting crowned by a standing figure, *Honos Alit Artes*, Hercules and Diomedes's mare, *Affuritate Et Tolerantia*, two figures, *Concedat Laurea Lingua*, an Unicorn, *Nihil in Explorat*; a man stoning a dog, *Alius Peccat Alius Plectit*; a man fettering a lyon, *Ingenium Vires Superatus*; an Eagle with a crab in its bill, *Iusta Ultio*; another *Animus Quoque Timendum*; and no doubt many others we have not seen, there are some of them with a little difference, done by Matthew and Wolfgang Laufer, C. K. and others.

PLATE VI.  
the first 10  
made for  
France by  
the Laufer's

Others by  
Weidinger,  
Lindner,  
Vogel,  
Hoger,  
Leykauf,  
Dietzel.

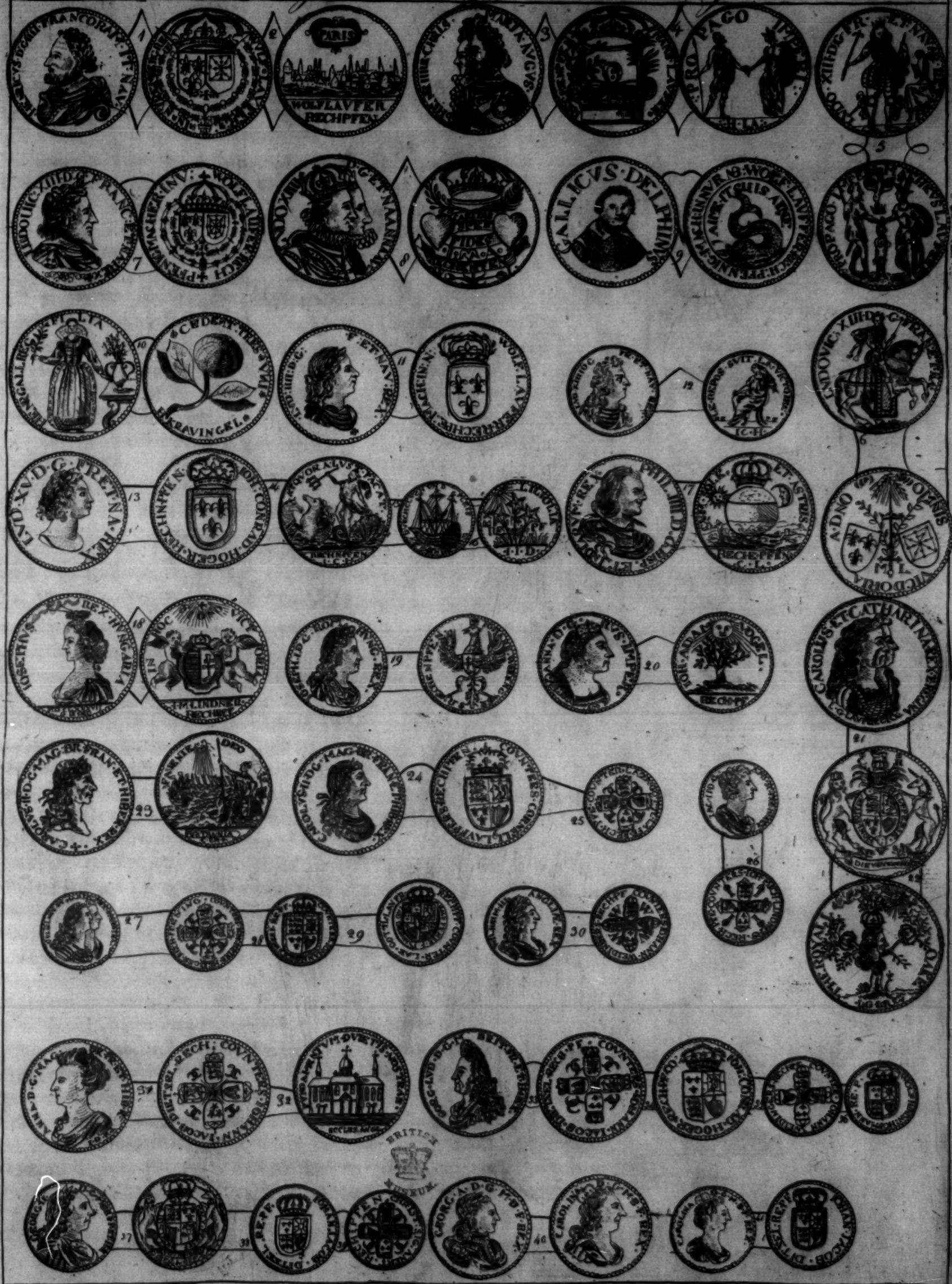
The first eleven pieces in plate 6. (except No. 16.) are done by the Laufers, and relate entirely to France, having the heads of Henry IV. Mary de Medicis, Lewis XIII. and Anne of Austria; several of the reverses are taken from French Jettons relating to the birth of the Dauphin and such like. No. 11. is the first we meet with done in the manner they are at present; the reverse having the single shield of France, the makers name and that of the piece, they are also much thinner and made of Brass, whereas the former ones were sometimes copper, No. 17. is a Spanish one of *Cornelius Laufers*, in the old manner, we have seen but another different sort of the King of Spain, No. 18, and 19. are of Joseph King of the Romans, afterwards Emperor, the first made by J. M. Lindner, the other by *John Weidinger*, No. 20. is of the Czarina Anna, and made by *John Adam Vogel*; No. 13, 14, 15, and 16. are of the present King of France, Lewis XV. by *John Conrad Hoger*, *Michael Leykauf*, and *John Jacob Dietzel*, who were all Counter Makers at Nurembergh, but whether are there at present cannot determine.

Charles II.  
James II.  
William  
and Mary,  
William III.  
Anne,  
George I.  
George II.

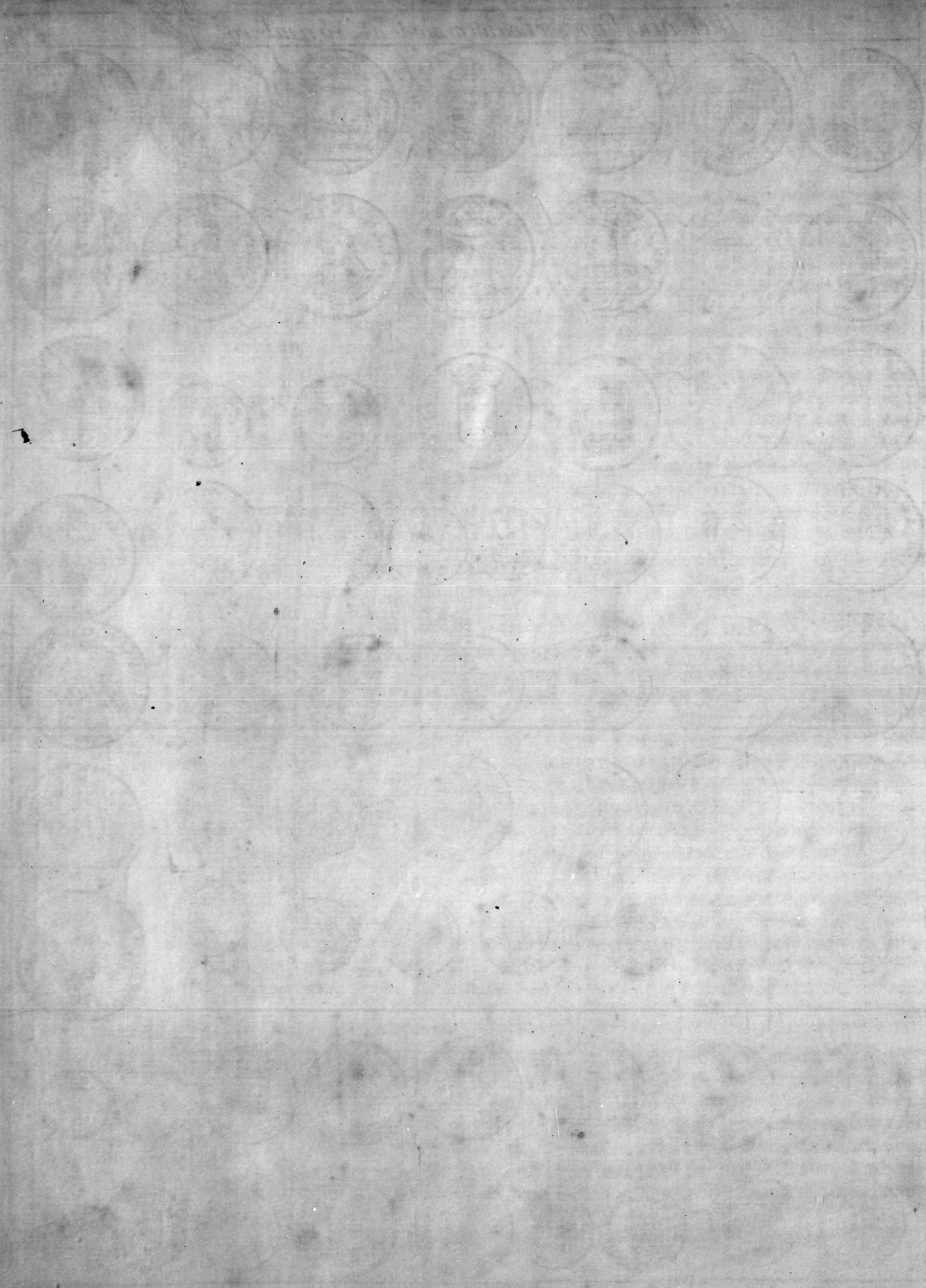
All the other pieces in this plate are made for England, beginning with Charles II. and continued to the present time, there being of James II. William and Mary, William III. Anne, George I. George II. and his present Majesty, No. 21 and 22. have the heads of Charles and Catherine, the royal arms supported on the reverse of the first, and the Royal Oak appear on the other; No. 23. has only the king's head, and for its reverse that of a well known medal with *Favente Deo*. No. 24. and No. 25. have the royal arms, one in a single shield, the other in cross, as on his coin with the OC between them, which

we











we find also upon No. 27. of William and Mary, No. 31. of Queen Anne, No. 33. and 39. of George I. and George II. but whether put on them by way of ornament, or for want of knowing the true reason of their being put on those of Charles, we do not know, the inscription on these and all the remaining ones, except No. 32. is the name of the maker and that of piece, as *Lazarus Gottlieb Laufer, Cornelius Laufer, John Michael Lindner, John Henry Meisger, John Weidinger, John Jacob Deitzel, John Conrad Hoyer, Wolfgang Hieron Hoffman and Christian Sig. Anert.*

The words *Rechen Pfenning*, in whole or in part stands upon all of them; to which is also added the English word *Counter*, answering to it, but the word *Jetton* we have never observed to have been upon any of the French. There is a sort of these pieces which are more like the old ones, or much thicker than usual; in this manner is No. 32. of Queen Anne, another of her's on the facing the Spanish Galleons at Vigo; also one on the successes in Germany, having Minerva standing near a trophy, with *Res In German. Feliciter Gestæ*; and in the exergue *Virtute Et Prudent Regina*; others of George I. like No. 32, and 37. and one with the figure of St. George, *Fidei Defensor Aquæ*; also one of Charles III. on the relieving of Barcelona 1706. and no doubt many more.

We will now, by way of Addenda, cursorily shew the manner in which they are used to compute with Jettons and Counters, as they were at first made for this purpose, and received their name from it.

It is done by laying them on lines, increasing in their value from the bottom, which is a line of Units; the second, or next above it, is a line of Tens; the third a line of Hundreds, the fourth of Thousands, and so on. A Counter laid on the first line is only 1, being laid on the second line it is 10, on the third it is a hundred, on the fourth it is a 1000, on the 5th it is 10,000, &c. A counter laid in the space between the first and second line is 5; between the second and third it is 50; between the third and fourth it is 500, and so on; being in all cases equal to five, of those which lay on the line under it, and half of one of those on the line over it. By this contrivance, less room is required to perform the operations in, and they are done by half the number; that is, four counters on each line, and one above it, are sufficient, instead of nine, which would otherwise have been wanted on each line. A tablett, or partition with its lines, and their values as just described, ready for the purpose of calculation, is marked with (a); many of which are usually made on a table, or rather a green cloth to put on a table, or other contrivance for the purpose of computing in this manner; we shall only give examples in addition and subtraction, which they seem to be particularly adapted for.

To lay down any number upon these Tables, as for example, 6327 is done in the same manner as it is reckoned; that is, the highest number first, and ending with the least, or units. Thus you lay a counter over the fifth line for 50,000, and another on it for 10,000, which makes 60,000; then lay three counters on the fourth line for 3000, two others being laid on the third line is 200; lay one over the second line for 50, and two on it for 20, is together 70; lastly, put a counter on the bottom line, and it compleats the number 6327.

E

Addition

Reckoning  
penny on all  
the reverses,  
and counter  
also on those  
for England.

Manner of  
used to compute  
with Counters

are laid up-  
on lines.

those on the  
bottom line  
of least value

between the  
lines are 5,  
50, 500,  
&c.

pl. 7. (a)

Notation,  
with coun-  
ters.

to lay down  
6327 (b)  
pl. 7.



Addition  
with Coun-  
ters.

Addition may be performed by beginning to add the highest number first, and probably may be in some cases preferred, to the method at present in use with the pen, in commencing with the least; however, as we think it will be sooner comprehended this way, we have pursued that method in adding 26526 to 63271, the number just laid on.

to 63271(b)  
add 26526

First lay a counter over the bottom line, and another upon it for 6; then 2 on the second line for 20; lay one over the third line for 500; also one over the fourth line, and one upon it for 6000; lastly, lay 2 on the fifth line for 20,000, the sum will be 89797, as in (c); in this example, no two numbers when added together amount to ten; therefore it is performed by laying on the 26526, without taking off any of those already there; but when the added number amounts to ten or more, the counters which are there must be shifted; in doing which, the general rule is, to take off as many counters as the number to be added wants of 10, and adding a 10; that is, putting down one on the line above, but if there is already 4 on it, instead of laying it down, take off all 4, and lay one above the line; and if there should be one there before, then take it off, and put one down on the next line, which is in fact taking off 99 and putting on 100, and in this manner all the following examples are worked.

to 89797(c)  
add 4624

Thus, to add 4624 to 89797, first the 4 is added by taking off 5 and 1; also 40 and 50; and laying on 100; then lay 2 counters on the 2d line for the 20; to add the 600, take off 500 and put on 100; take off 4000 and 5000 and lay down 10000; lastly, put 4 single ones on the line of thousands, the amount being

94421(d)

94421, as in (d). Again, to 94421 add 8679; the 9 is added by taking off 1 and putting down 10; the 70 is done by taking off 30 and 400, and putting down 500; the 600 is added by taking off 500 and laying on 100; taking off 4000 and

to 94421(d)  
add 8679

5000 and putting down 10000; lastly, take off 5000 and put down 3000, take off 40000 and 50000 and lay down 100000, and the sum is 103100, as in (e).

103100(e)

That this manner of working may be easier understood, those counters which have been shifted are left on, but are scratched, and must not be reckoned in summing up, and those which have been first taken off and then put on again, are made black, and the same will be done in what follows.

Addition of  
different de-  
nominations

What has already been done, has been with Integers or numbers of one denomination only; but if there are more than one, as suppose pounds, shillings, and pence, or any other; the operation is the same, only in 3 such partitions, as (a) instead of one; that on the left being for the integer, and the other two for the parts; which last never require more than the two bottom lines for unites and tens, as we have no integer divided into an hundred or more parts; for in that case, a third would likewise be necessary; for example, to lay down 7632l. 17s. 10d. put on the pounds as before; then lay in the next partition a counter above the bottom line, and 2 on it for 7 shillings; lastly, a counter laid on the 2d line of the 3d partition is the 10 pence, as in (f). And if to this we add 4759l. 3s. 8d. the sum is 12391l. 11s. 6d.; as it stands in (g). The 8d. is added by taking off 4, and putting down one on the bottom line of the 2d partition; the 3s. by taking off 7 and laying on 10s. in the same partition; the rest

7632 7 10  
4759 3 8

12391 11 6



is done as before. N. B. there are many other ways of working these mixed numbers.

Subtraction may likewise be performed as numeration and addition, by com-Subtraction  
mencing with the highest numbers first; but we shall proceed as we begun, of Integers.  
with the least; as for example, subtract 54363 from 76894. having laid down  
the 76894 as in (h). In this example, as in the first; in addition there is no occa- 76894 (h)  
sion to shift any counters, only to take off those to be subtracted, which are 4363  
scratched, and must not be reckoned, the remainder being 22531, as (i). Again, 22531 (i)  
subtract 57688 from 81454, in this example, as the figures to be subtracted general rule  
(all but the highest) are more than these they are to be taken from, you must 81454 (k)  
observe always to take off 10, and to lay down as many as the number to be sub- 57688  
tracted wants of 10; as first to subtract 8, lay down 5 and take off 3 and 10, the 23766 (l)  
80 is subtracted by putting on 20 and taking off 100; the 600 by laying on 500  
and taking off 100 and 1000; the 7000 by laying on 3000 and taking off 10000;  
and lastly, take off the 50000 and the remainder is 23766, as in (l). If mixed ditto of  
numbers are to be subtracted, as suppose 78330 l. 1 s. 8 d. from 91764 l. 11 s. 9 d. mixed num-  
lay down the last sum, as in (m); then you first subtract the 8 d. by putting bers.  
off the 5 and 3 single pence, and taking 1 s. off from the bottom line of the shil-  
lings; proceed with the pounds as before, and the remainder will be found to be  
13434 l. 10 s. 1 d. as in (n).

It is on the same principles, that addition and subtraction are performed by Affinity be-  
Counters, and upon Counting Boards; the laying down a Counter being to the tween Coun-  
same purpose, as pushing forward a Bead on a Counting Board, and taking one ters and  
off, by a Bead's being shoved back; to make this the plainer, after a short descrip- Counting  
tion of each board, which are the *Abacus* of the Romans, the *Soan Pan* of the Boards.  
Chinese, and the *Shchota* of the Russians; we have worked the same examples on as the  
them, as we have done with counters, and distinguished them by the same letters, Abacus,  
(b), (c), &c. the bead's are also scratched, which have been shoved back, and Soan Pan,  
those made black which have been first shoved back, and then forward again. Shchota.

The Roman Abacus has 7 wires or lines for Integers, each having 4 Beads Roman  
running on them, separated by a Partition, from 7 other lines, which have only Abacus.  
one Bead on them, each in value 5 of those under it. The lines increase in their pl. 7. (a)  
value from right to left, the 1st being Units, the 2d Tens, the 3d hundreds, and  
so on; these values are marked on the partition. There is also another line to  
the right of these, for 12th parts of an Integer, the bead at top being  $\frac{1}{12}$ , and  
the 5 under it each  $\frac{1}{12}$ , together  $\frac{5}{12}$ ; which is the same number as the 4 beads on  
the 3 small lines, as that at top is  $\frac{1}{12}$ ; that in the middle  $\frac{1}{12}$ , and each of the two  
at bottom  $\frac{1}{12}$ . (Vide Phil. Trans. Abridg. Vol. xi. p. 380.) the manner of  
working on this board, is by pushing the beads forward and backward, to and  
from the partition, and it is only those which lay close to it, are to be reckoned  
when the work is done. The Abacus ready for working is marked, (a) in pl. 7,  
and (b), (c), &c. are the same examples, as were worked by counters.

The Chinese Soan Pan differs principally from the Abacus in its having 2 fives Chinese  
at top, instead of one as that has, and in having 5 single ones at the bottom under Soan Pan.  
the partition, the Abacus having but four; so that the 2 lines together make 15 pl. 7. (a)  
instead of 9; by which means a sum is added or subtracted with more ease, and  
fewer



fewer moves, but the notation afterwards does not appear quite so plain. Parts of an integer, under 16, may be work'd by taking one more line to the right, and under 31, by taking two; and by this method are worked the shillings and pence in (f), (g), (m), (n), their boards have not always the same number of lines but generally about 13; one of them with 8 is represented in (a), ready for use.

Russian  
Shtchota.  
pl. 7. (a)

The Russian Shtchota has 9 beads on each line, and no partition, instead of 4 single ones, and a 5 with a partition between them; before you begin to work them, they are all on the left side of the board, as in (a), with a sufficient space left to work them in, which is done by pushing them forward and backward from left to right, and from right to left, and not upwards and downwards as on the Abacus, and Soan Pan. It is only those on the right side are to be reckoned; when the operation is finished. We apprehend the Russians reckon the top line, a line of Units; and increase the value in descending, but the result of any operation being the same; if we begin to compute from the bottom upwards, we have worked them that way, as we did the counters, and for the same reason. Mixed numbers are worked by taking another tablette as (a), for the parts, the 2 bottom lines for the least Denomination. Suppose pence, and the 2 next above for shillings, as in (g), (h), (i), (k). This Board ready for use is seen under (a), which is followed by the same examples as before.

The Beads on each line of this Board are often of several colours, those at bottom being black, the 2d or next above Green, the 3d Yellow, the 4th Blue, the 5th Red, and those at top White; some of these reckoning Boards have a partition from top to bottom, with four small ones, such as (a) on each side; they have others again larger still, having six partitions, as above, instead of one, and 6 such small ones as (a) between each \* of them.

\* Peter Van Hagen Reife in Rusland, p. 524. Copenhagen 1744, 8vo.

## F I N I S.

The Chinese Soan Pan differs principally from the Abacus in its having a five at top, instead of one as that has, and in having 5 single ones at the bottom under the partition, the Abacus having but four; so that the 5 lines together make 15 instead of 10, by which means a sum is added or subtracted with more ease, and fewer



Counters.

| a)                                      | b) 63271 | c) 89797 | d) 94421 | e) 103100 | f) 76321 | 7 <sup>10</sup>  | 10 <sup>10</sup> | g) 123911 | h <sup>10</sup>  |
|-----------------------------------------|----------|----------|----------|-----------|----------|------------------|------------------|-----------|------------------|
| CM<br>LM<br>KM<br>VM<br>MD<br>CL<br>XVI |          |          |          |           |          |                  |                  |           |                  |
| 6 <sup>10</sup>                         | h) 76894 | i) 22531 | k) 81454 | l) 23766  | m) 91764 | 11 <sup>10</sup> | 9 <sup>10</sup>  | n) 13434  | 10 <sup>10</sup> |
| CM<br>LM<br>KM<br>VM<br>MD<br>CL<br>XVI |          |          |          |           |          |                  |                  |           |                  |

Roman Abacus.

| a) The Abacus | b) 63271 | c) 89797 | d) 94421 | e) 103100 | f) 7632-7-10  |
|---------------|----------|----------|----------|-----------|---------------|
|               |          |          |          |           |               |
| g) 12391-11-6 | h) 76894 | i) 22531 | k) 81454 | l) 23766  | m) 91764-11-9 |
|               |          |          |          |           |               |
| n) 13434-10-1 |          |          |          |           |               |
|               |          |          |          |           |               |



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